

Proceedings Summary

Peconic River Remedial Alternatives Workshop

Berkner Hall, Brookhaven National Laboratory, Upton, New York

Introduction and Executive Summary

The Peconic River Remedial Alternatives Workshop was held December 12 - 13, 2000 at Brookhaven National Laboratory (BNL), Upton, New York. The purpose of the workshop was to evaluate alternative remedial technologies or remedial strategies for the removal or treatment of contaminated sediments in the Peconic River and adjacent wetlands. Stakeholders, concerned about potential damage to the existing wetlands and sediment re-suspension, asked that the Department of Energy (DOE) investigate alternatives to the current proposed remedial approach of sediment removal. The four classes of potential alternative remedial technologies evaluated during the workshop were wetlands restoration and constructed wetlands, phytoremediation, alternative technologies, and sediment removal.

Workshop Organization

A nationwide search was conducted by DOE's TechCon program staff to target companies with demonstrated field experience in the identified areas. Eighty-six firms were identified and contacted, and forty-two submitted qualifications for participation in the workshop. These firms were ranked on the basis of general company experience, environmental management experience, DOE experience, and demonstrated project experience similar to the Peconic River project. On November 21, 2000, stakeholders and the DOE and BNL project teams met at BNL to select the vendors who would present their technologies or remedial approaches applicable to the Peconic River project. Sixteen firms were selected and invited to present at the workshop. The firms selected were:

Wetlands Restoration and Constructed Wetlands

Creative Habitat Corporation
Roy F. Weston, Inc.

Roux Associates, Inc.
URS Corporation

Phytoremediation

Applied PhytoGenetics, Inc.
CH₂M Hill, Inc.
Edenspace Systems Corporation

Phytokinetics, Inc.
Viridian Environmental, LLC



Alternative Technologies

AquaBlok, Ltd.
GeoSyntec Consultants, Inc.

Weiss Associates

Sediment Removal Technologies

IT Group
Maxymillian Technologies, Inc.

Miller Environmental Group
Sevenson Environmental Services, Inc.

Companies that submitted qualifications, but were not selected to present at the workshop, were invited to attend as observers and offered the opportunity to display a poster presentation at the workshop's poster session.

Goals and Objectives

The overall goal of the workshop was to develop a sizable base of information on proven and commercially available remedial alternatives for the removal or treatment of contaminated sediments. This information will be utilized by the project team and stakeholders in the decision process to select a final remedy for contaminated Peconic River sediments. Another key goal of the workshop (and the pre- and post-workshop meetings) was to provide the community with an opportunity to increase its knowledge of and express its opinions about the technologies and remedial alternatives.

Presenters were asked to address several key areas where the project team and stakeholders desired further information. These areas are summarized below.

Key Issues Identified

- Applicability to the Peconic River sediment remediation project
- Minimization of the impact or damage to the wetlands and adjacent areas
- Minimization or elimination of re-suspension and/or mobilization of contaminants and contamination of downstream sediments
- Control of the spread of non-indigenous species of plants into the environment
- Control of water table and experience with similar high water tables
- Methodology for elimination of native vegetation to allow the remediation plants to be planted
- Difference between “constructed wetlands” and “phytoremediation”

Difference between constructed wetlands for treatment and wetlands/habitat restoration

Outcome

More than 90 individuals attended the first day of the workshop, and more than 50 attended the second day. The audience represented regulatory agencies, DOE, BNL, participating companies, and community organizations. Significantly, more than 20 percent of the attendees were members of the community.

Attendees appreciated the opportunity for personal interaction. The audience frequently asked questions during the Q&A period that followed each speaker, as well as during the panel discussion that followed each session on a particular technology area. Vendors also welcomed the opportunity for networking with other firms in related fields.

Evaluations collected from the audience indicate that the workshop format was useful and the presentations informative. In particular, one respondent lauded the variety of participants, saying it was "extremely useful because it adds perspective" on the options available.

As a result of this workshop, several new alternatives for remediation or treatment of contaminated sediments were advanced for consideration. Stakeholders expressed particular interest in electro-chemical remediation technology, phyto-stabilization and vacuum dredging. Many workshop participants also felt that remediation of the Peconic River sediments and wetlands may require more than one technology.

The major conclusions reached at the end of the workshop included:

- Wetland reconstruction and habitat restoration is feasible if any area along the Peconic River is disturbed during the remediation process. The technology to do so is evident and proven. The key is to inventory all potentially affected areas first and to develop the restoration goals for the restored areas in advance.
- Phytoremediation may have some promise. However, no plants currently have been identified, either indigenous or engineered, that could meet the existing treatment goals established for the Peconic River sediments. A research period would be required, followed by on-site pilot testing. The timeline for completing such a project is uncertain due to the inability to project plant uptake of inorganic compounds, or metabolism of organic contaminants. The consensus of the panel members was that an evaluation of native plants should be undertaken to determine if phytoremediation is already occurring.
- Further evaluation of alternative sediment cleanup technologies (such as electro-chemical remediation) may need to include pilot studies or laboratory-scale demonstrations before these alternatives could be considered in a final remedy
- A combination of technologies may be appropriate for remediating the sediments. A new overall project strategy that identifies the best remedial approach or technology for each area of concern should be considered.

The vendor participants noted that additional data on river and sediment conditions would be needed before all of the alternative technologies could be adequately evaluated.

Future Steps

- Hold a post-workshop meeting to compile findings and discuss technologies worthy of further consideration (January 18, 2001).
- Place workshop proceedings on the TechCon web site and into the site Administrative Record (March 2001).
- Revisit the schedule for the Peconic River project based on information gathered from the workshop and input from the community (March 2001).
- Finalize schedule and initiate project activities (Spring 2001).

Future activities for this project will continue to seek both technical and community input. We hope this process will lead to a feasible solution that provides regulatory compliance and meets the expectations of stakeholders.